

CENTRONICS [PARALLEL] PRINTER INTERFACE

MODEL CP2068

INSTRUCTIONS



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Welcome to the **AERCO** Centronics Interface for the Timex 2068 computer.

The interface board plugs into the back of the 2068. Be sure the power switch on the computer is turned **OFF** before installing the interface. The connector at the end of the cable plugs into the Centronics [Parallel] port on your printer.

CAUTION DO NOT REMOVE OR INSTALL INTERFACE WITH POWER ON!

The cassette tape contains a program that allows printing from **LPRINT** and **LLIST**. If you have a dot matrix printer with bit mapped graphics, you can also **COPY** the screen by using the command **LPRINT CHR\$ 1**.

GETTING STARTED:

1. Switch **OFF** your computer and printer.
2. Attach the board to the rear connector of the computer. Be sure the keyway lines up on the connector.
3. Attach the ribbon cable connector to the Centronics port of your printer.
4. Switch **ON** the computer and enter the command: **LOAD ""**
5. Insert the print driver tape in your cassette deck.
6. Start playing the tape and press **ENTER**.

When the tape has loaded, you will see the following menu:

CENTRONICS PRINT DRIVER

is now loaded

***** PRESS a KEY *****

C Customize **Do this first**

E Exit to BASIC

L Load your program from tape

N Notes on Operation

P Printer demonstration

S Save on tape

Explanation of Commands

Customize modifies the bit mapped graphics mode for your particular make of printer. Press C and you will see notes on screen copy. Press any key again and you will see a table of the most popular printers. Select the number corresponding to your printer. If you do not see your printer, try all of the selections.

NOTE: The Customize selection can be changed anytime. It remembers the last one.

NOTE: The Customize selection is only required for SCREEN COPY. It does not affect LLIST or LPRINT.

Exit to BASIC allows you to enter programs and commands as you normally would.

Load your program from tape allows you to merge your program with the print driver.

1. Load the print driver tape as before.
- 2 Insert your program tape in cassette deck.
3. Press the L key
4. Start the tape and press any key.

Notes on Operation explains some of the operating details. Press any key to see the next screen. It will return to the menu when completed.

Printer demonstration is a sample program to exercise your printer.

1. Press the P key.
2. Enter the print width you want.

Save on tape allows you to copy the print driver. Be sure to make a copy of the original tape as well as your customized version. The print driver is loaded once at the start of both sides of the original tape.

1. Insert a fresh tape in the deck.
2. Press the S key.
3. Start the tape in record and press any key.

NOTE: The print driver tape saves in [2] sections. At the end of the first section, it pauses to request you to press any key before completing the second section.

Test your system by pressing P to send the sample text to your printer. You will have to specify the number of characters you wish on the print line.

Print width: You can adjust the number of characters any time with this command
POKE 64459, width-1

If your printer is printing everything on one line, you must tell the software to send a line feed after every carriage return with POKE 64460,10

If the printer only prints on every other line, POKE 64460,0

Printer Command Codes: Most printers accept special commands for functions such as double width characters or underline. To send command codes to the printer you must enter the LITERAL MODE. The LITERAL MODE ignores the single keywords [PRINT,GOTO,etc] and sends the character directly thru the interface to the printer. If you want keywords to show in an LLIST, you must return to the EXPANDING MODE. The EXPANDING MODE is the normal state when you load the system. The printer will remember command codes until you change them or do a power reset.

1. POKE 64456,0 this enters the LITERAL MODE
2. LPRINT CHR\$ x; CHR\$ y; CHR\$ z

The z,y,z characters can be entered in [2] ways:

1. The decimal value of the ASCII code preceded by CHR\$ (CHR\$ 81)
2. The ASCII character itself between quotes, if it appears on the keyboard ("Q")

For example; if the command for Compressed Pitch is ESC Q
POKE 64456,0

LPRINT CHR\$ 27; CHR\$ 81

OR

LPRINT CHR\$ 27; "Q"

NOTE: The command may need to be terminated with a semi-colon
(to disable carriage return) LPRINT CHR\$ 27; "Q" ;

Refer to the ASCII Conversion Chart to find the various codes.

POKE 64456, 1 to return to the ~~LITERAL~~ EXPANDING MODE.

Test your printer's command codes. Perform steps 1&2. Enter LLIST to have your printer list the program. Compare the different formats.

As you acquire software programs, you might want to make a permanent merge with the print driver. Then you will only have to load one program.

1. LOAD the print driver cassette. Press E to enter BASIC.
2. DELETE [SHIFT 0] 1, 9981 This eliminates the demo and notes.
3. Add the following line to the program: 9993 LOAD ""
4. Insert a fresh tape in your recorder, select Record and enter GOTO 1.
5. Press any key when instructed to do so.
6. When the report appears on the screen, stop the tape and remove it.
7. Put your program tape in the recorder and enter LOAD ""
8. When the program loads, change all entries of COPY to LPRINT CHR\$ 1.
9. Remove your program tape and exchange it with the tape just made of the print driver code.

10 Enter SAVE ["name" LINE X] *the first line of your program.*
SAVE ["WP" LINE 1]

NOTE: "name" must occupy at least one space. Even if it is blank.

If the LLIST command develops an uninvited Copy of the screen:

POKE 64463,0
POKE 64464,0
POKE 64465,0

LPRINT CHR\$ 1 must now be replaced by:

RAND USR 65006 for the OLIVETTI ink jet printer
RAND USR 64844 for all other printers

If you encounter problems, look for obvious solutions:

1. Inspect the connections to the computer and printer.
2. Inspect the interface board and cable for visual defects.
3. Verify that you have followed the directions without mistake.
4. Insure that the printer is online.
5. Look for clues in the program listings.
6. Enter GOTO 1 to return to the menu.

If you continue to have problems, call or write us and we will do our best to assist in any way we can. It is our intent to provide the best possible product and support. Please understand that we might be hard pressed to provide immediate aid for one of a kind problems.

AERCO PRINTER INTERFACE CHARACTERS

DECIMAL	ASCII	DECIMAL	ASCII	DECIMAL	ASCII
000	MUL	041)	082	R
001	SOH	042	*	083	S
002	STX	043	+	084	T
003	ETX	044	'	085	U
004	EOT	045	-	086	U
005	ENQ	046	,	087	W
006	ACK	047	/	088	X
007	BEL	048	0	089	Y
008	BS	049	1	090	Z
009	HT	050	2	091	[
010	LF	051	3	092	/
011	VT	052	4	093]
012	FF	053	5	094	-
013	CR	054	6	095	-
014	SO	055	7	096	-
015	SI	056	8	097	a
016	DLE	057	9	098	b
017	DC1	058	:	099	c
018	DC2	059	;	100	d
019	DC3	060	<	101	e
020	DC5	061	=	102	f
021	NRK	062	>	103	g
022	SYN	063	?	104	h
023	ETB	064	@	105	i
024	CRM	065	A	106	j
025	EM	066	B	107	k
026	SUB	067	C	108	l
027	ESC	068	D	109	m
028	FS	069	E	110	n
029	GS	070	F	111	o
030	RS	071	G		
031	US	072	H		
032		073	I	119	
033	!	074	J	120	W
034	"	075	K	121	X
035	#	076	L	122	Y
036	\$	077	M	123	Z
037	%	078	N	124	{
038	&	079	O	125	
039	.	080	P	126	}
040	(081	Q	127	~
					DEL

ETC...



Box 18093 Austin, TX 78760
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MODULAR INTERFACE FOR TSC COMPUTERS
CP-ZX V.3 CENTRONICS PRINTER INTERFACE
TS1000, TS1500, TS2068

COMPUTER

DO	3
D1	17
D2	18
D3	14
D4	4
D5	7
D6	13
D7	8

WR	8
AO	11
A1	3
A2	2
A3	1
A4	6
A5	5
A6	4
A7	3
IORQ	2
RD	12

D1
D2
D3
D4

LS273

2	OP2 D0
16	OP3 D1
19	OP4 D2
15	OP5 D3
5	OP6 D4
6	OP7 D5
12	OP8 D6
9	OP9 D7

PRINTER

OP2 D0
OP3 D1
OP4 D2
OP5 D3
OP6 D4
OP7 D5
OP8 D6
OP9 D7

OP31 RESET

OP19 GND
OP20 GND
OP21 GND
OP22 GND
OP23 GND
OP24 GND
OP25 GND
OP26 GND
OP27 GND
OP28 GND

OP1 STROBE

OP12 PAPER
OP13 SELECT
OP30 GND
OP11 BUSY

The I/O Port Identity of this board is 7F HEX (127 Decimal). A byte is sent to the printer by writing it to the port. The status of the printer is determined by reading the port. The Printer Strobe is generated by reading the port immediately after writing to it.